Workshop for developing a client-server application for Baccarat game.

Task 01

Establish a source (`src`) directory and a classes directory for your application.

Establish a Java package for your application.

Under your main package, create two sub-packages named "client" and "server".

Ensure that your application can accept two command-line arguments as shown below.

```
java -cp classes sg.edu.nus.iss.baccarat.server.ServerApp 12345 4
```

The first argument should be the port number for the server program.

The second argument should be the no of decks of cards for the server program.

Shuffle the four decks of cards and save the values to a data file named "cards.db".

1 is Ace 1.1 is hearts, 1.2 is diamonds, 1.3 is spades, and 1.4 is clubs.
11 is Jack 11.1 is hearts, 11.2 is diamonds, 11.3 is spades, and 11.4 is clubs.

E.g.

```
1.1
4
5
11 .1
10
11.4
……
```

(25 marks)

Task 02

Develop a client program that establishes a connection with the server program.

java -cp classes sg.edu.nus.iss.baccarat.client.ClientApp localhost:12345

Enable user input for commands in the client program.

All the server logic must be written in a class name “BaccaratEngine.java”

Command	Client	Server
Login kenneth 100	Send login|kenneth|100 to the server	Parse the command and create a file named "kenneth.db" with the value "100" as the content of the file.
Bet 50	Send bet|50 to the server	Parse the command and allow client to place a bet of 50 on the current session
Deal B or Deal P	Send deal|B or deal|P to the server	On the server or dealer side, split the betting side into two categories: player or banker. Draw the number, which is the card, from the "cards.db" file. After retrieving the card or number from the file, the server program must remove it from the "cards.db" file. The rules for drawing three cards are as follows: the total sum of the first two cards must be less than 15 or equal to 15. Note that the program must remove the decimal from the number

<table>
<tr><td></td><td>At this point, the client program must decode the message being sent back as "Banker wins with 7 points".

If the sum of the points on one side is greater than the sum of the points on the other side, then that side is the winner.</td><td>when calculating the sum. If both side the sum is the same then the server program will need to write back to the client as draw

Please note that 11, 12, and 13 represent Jack, Queen, and King, respectively, and they are valued at 10 in the game.

Once completed, the server program must send the following outcome to the client program: "P|1|10|3,B|10|10|7".

If the client's bet guess is correct, pay the client by adding the bet amount to the "kenneth.db" file; otherwise, subtract the bet amount.

In Baccarat, if the Banker's hand wins with a total of 6 consisting of 2 or 3 cards, the payout is half. This rule is known as the "6-Card Rule" or "Six-Card Charlie" rule. It's a specific condition that affects the payout in certain situations. Half payment to the player db file

If the player's account balance is insufficient, send a message back to the client stating "insufficient amount".</td></tr>
</table>

(35 Marks)

Task 03

In the client program, you are required to create a CSV file to keep track of the winning games. Hint : game_history.csv

Each row in the CSV file can only record up to 6 games, and there can be multiple rows.

B,P,P,P,B,B
B,B,P,P,B,B
B,P,B,P,B,B
B,B,P,P,B,B
B,P,P,P,B,P

(15 marks)

Task 04

Write at least two test cases for the `BaccaratEngine.java` class.

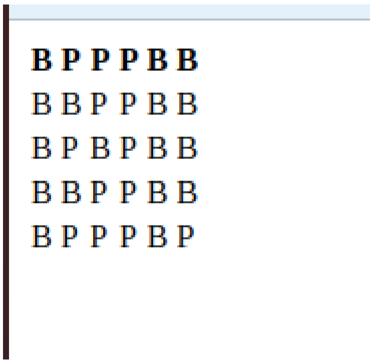
(5 Marks)

Task 05

Create an HTML table that reads a CSV file and publish it as a website, you can use JavaScript to read the CSV file and then dynamically generate the HTML table.

Place all three files (`index.html`, `script.js`, and `game_history.csv`) in the same directory.

When you open the `index.html` file in a web browser, it will read the `game_history.csv` file and display its contents as an HTML table on the webpage.



```
B P P P B B
B B P P B B
B P B P B B
B B P P B B
B P P P B P
```

Publish this to vercel

(25 Marks)